

REMARKS:

Status Of Claims

Claims 1-24 were previously pending, claim 17 has been amended, and claims 25-35 have been added. Thus, claims 1-34 are currently pending in the application with claims 1, 9, 17, 25, 33, and 34 being independent.

Office Action

In the office action, the Examiner rejected claims 1 -24 under 35 U.S.C. 103(a) as being unpatentable over Yang et al., U.S. Patent Publication No. 2001/0033600, in view of Hall, U.S. Patent No. 6,078,571. The Examiner also mentions a Taylor Jr. reference, particularly with regard to claims 8, 9, 16, and 24. Applicant is unaware of a Taylor Jr. reference and assumes this is a typographical error on the Examiner's part. Applicant believes the Examiner intended to cite Hall rather than Taylor Jr. In any case, Applicant respectfully asserts that the currently pending claims distinguish the present invention from the prior art references of record.

Specifically, claim 1 recites "a base station ... operating one of the two antennas at a first frequency for handling traffic on the first frequency, and operating the other of the two antennas at a second frequency as a pilot beacon for handing off calls to and from adjacent cells in a soft manner". Therefore, the single base station recited in claim 1 operates at both the first frequency for handling traffic and the second frequency for handing off calls as a pilot beacon.

As stated beginning on page 5, emphasis added:

FIG. 3 is a schematic diagram of a tier of seven cells 80, 82, 84, 86, 88, 90, 92. ***The center cell has two base stations that operate at frequencies F1 and F2, respectively. The other six cells each have only one base station that operates as a full base station at F1 and as a pilot beacon***

at F2. This will assist a mobile moving from cell 80 at F2 to any of the surrounding cells 82-92 that operates at F1. BTS 18 provides communications in cell 82, BTS 20 provides communications in cell 84, and so on.

For those cells that require two frequencies for traffic, the base stations 14, 16 are used to double the capacity in this coverage area. However, not all cells in a typical CDMA network need two frequencies for traffic channels because of lower call density in the cells. Cells 82-92 satisfy this condition and low traffic is required at frequency F1 only.

The BTS 18 is operable to control transmission and reception of CDMA PCS traffic in the cell 82 using selected ones of a defined set of codes for each sector 42, 44, 46. The codes may include, for example, 64 Walsh codes for each sector. In accordance with one aspect of the present invention, the BTS is configured to divide the 64 available Walsh codes for each sector of its cell between two RF frequencies (F1, F2) in the sector. The base station 18 of cell 82 may be configured to operate as both a full base station for the first frequency and as a pilot beacon for a second frequency. The full base station portion operates as described above. However, the pilot beacon portion operates primarily to ensure soft call handoffs. For example, the BTS may operate at a first frequency F1 (e.g., 1931.25 MHZ) then to act as a pilot beacon, it will be programmed to operate at a second frequency F2 (e.g., 1933.75 MHZ). The mobile stations 48, 50, 52, 54 are programmed to scan between frequencies F1 and F2 and to lock onto the strongest pilot channel.

The configuration of a base station to operate two frequencies

eliminates the need for a second base station to act as a pilot beacon.

One BTS will provide the hardware required to operate two frequencies F1 and F2.

Thus, the one base station recited in claim 1 operates at two frequencies, one for handling traffic and one for handing off calls, thereby eliminating the need for a second base station to act as a pilot beacon.

In contrast, none of the prior art references of record shows such structure. For example, in rejecting claim 1, the Examiner relies on Hall. However, Hall simply teaches the problem the present invention seeks to avoid. Specifically, as is clearly shown in figure 1, Hall teaches a target base station 106 operating at frequencies that are different than an adjacent base station 103. To overcome the 'hard handoff' problem, Hall teaches a separate apparatus 109 co-located with the target base station 106. In other words, Hall's target base station does not act as a pilot beacon. Rather, Hall requires the separate apparatus 109 to act as a pilot beacon. In fact, Hall does not include any suggestion that either base station 103, 106 can handle traffic on one frequency and act as a pilot beacon on another frequency. Therefore, Hall does not disclose, suggest, or make obvious "a base station ... operating one of the two antennas at a first frequency for handling traffic on the first frequency, and operating the other of the two antennas at a second frequency as a pilot beacon for handing off calls to and from adjacent cells in a soft manner", as claimed in claim 1.

As the Examiner is correct in asserting that Yang does not teach the above described functionality, the prior art references of record simply do not disclose, suggest, or make obvious "a base station ... operating one of the two antennas at a first frequency for handling traffic on the first frequency, and operating the other of the two antennas at a second frequency as a pilot beacon for handing off calls to and from adjacent cells in a soft manner", as claimed in claim 1.

Similarly, claim 9 recites “using a single base station unit coupled with the antennas for controlling the transmitting and receiving over one of the two antennas in each sector over a first frequency using selected ones of a defined set of code” and using that very same “base station unit as a pilot beacon over a second frequency using selected ones of a defined set of codes for handing off calls between adjacent cells in a soft manner”. Thus, the single base station recited in claim 9 operates at two frequencies, one for handling traffic and one for handing off calls, thereby eliminating the need for a second base station to act as a pilot beacon.

In contrast, as discussed above, Hall teaches a base station 106 for handling traffic and a separate apparatus 109 acting as a pilot beacon for handing off calls. As a result, the prior art references of record simply do not disclose, suggest, or make obvious “using a single base station unit coupled with the antennas for controlling the transmitting and receiving over one of the two antennas in each sector over a first frequency using selected ones of a defined set of code” and using that very same “base station unit as a pilot beacon over a second frequency using selected ones of a defined set of codes for handing off calls between adjacent cells in a soft manner”, as claimed in claim 9.

Furthermore, claim 17 recites “the base station being [configured] so that a first antenna in each sector transmits at a first frequency for handling traffic on the first frequency and a second antenna in each sector transmits at a second frequency for handing off calls between adjacent cells”. Thus, the single base station recited in claim 17 each operate at two frequencies, one for handling traffic and one for handing off calls, thereby eliminating the need for a second base station to act as a pilot beacon.

In contrast, as discussed above, Hall teaches a base station 106 for handling traffic and a separate apparatus 109 acting as a pilot beacon for handing off calls. As a result, the prior art references of record simply do not disclose, suggest, or make obvious “the base station being [configured] so that a first antenna in each sector transmits at a first

frequency for handling traffic on the first frequency and a second antenna in each sector transmits at a second frequency for handing off calls between adjacent cells", as claimed in claim 17.

It should be noted that the amendment to claim 17 is intended to correct a typographical error. Thus, this amendment should not be viewed or interpreted as limiting the scope of the claims.

Finally, the Examiner has simply not properly established a *prima facie* case of obviousness. Specifically, the Examiner has not cited references that teach all of the claim limitations, nor has the Examiner cited prior art that suggests the desirability of the modification. As the Examiner is aware, the Examiner must satisfy three criteria in order to establish the requisite *prima facie* case of obviousness: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine their teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or combination of references) must teach or suggest all the claim limitations. MPEP §706.02(j), citing *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

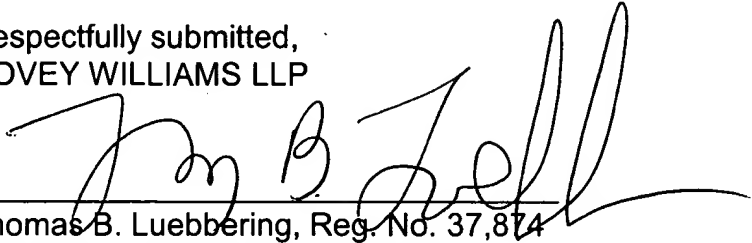
As discussed above, the prior art references made of record do not teach all of the claim limitations, much less provide any suggestion or motivation to combine their teachings. Therefore, the present obviousness rejections are improper and cannot be sustained.

Claims 25-34 have been added to further distinguish the present invention over the prior art and may help the Examiner better understand the scope of the invention. The remaining claims all depend directly or indirectly from independent claims 1, 9, and 17, and are therefore also allowable. In view of the foregoing, a Notice of Allowance appears to be in order and such is courteously solicited.

Any additional fee which is due in connection with this amendment should be applied against our Deposit Account No. 19-0522.

Respectfully submitted,
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